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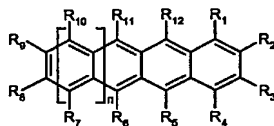
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(54) Title: IMPROVEMENTS IN AND RELATING TO ORGANIC SEMICONDUCTING LAYERS



(A)

(57) Abstract: An organic semiconducting layer formulation, which comprises: an organic binder which has a permittivity,  $\epsilon$ , at 1,000 Hz of 3.3 or less; and a polyacene compound of Formula: A: wherein: each of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$  and  $R_{12}$ , which may be the same or different, independently represents hydrogen; an optionally substituted  $C_1$ - $C_{40}$  carbyl or hydrocarbyl group; an optionally substituted  $C_1$ - $C_{40}$  alkoxy group; an optionally substituted  $C_6$ - $C_{40}$  aryloxy group; an optionally substituted  $C_7$ - $C_{40}$  alkylaryloxy group; an optionally substituted  $C_2$ - $C_{40}$  alkoxycarbonyl group; an optionally substituted  $C_7$ - $C_{40}$  aryloxycarbonyl group; a cyano group (-CN); a carbamoyl group (-C(=O)NH<sub>2</sub>); a haloformyl group (-C(=O)-X, wherein X represents a halogen atom); a formyl group (-C(=O)-H); an isocyano group; an isocyanate group; a thiocyanate group or a thioisocyanate group; an optionally substituted amino group; a hydroxy group; a nitro group; a CF<sub>3</sub> group; a halo group (Cl, Br, F); or an optionally substituted silyl group; and wherein independently each pair of  $R_2$  and  $R_3$  and/or  $R_8$  and  $R_9$ , may be cross-bridged to form a  $C_4$ - $C_{40}$  saturated or unsaturated ring, which saturated or unsaturated ring may be intervened by an oxygen atom, a sulphur atom or a group shown by formula -N( $R_a$ )- (wherein  $R_a$  is a hydrogen atom or an optionally substituted hydrocarbon group), or may optionally be substituted; and wherein one or more of the carbon atoms of the polyacene skeleton may optionally be substituted by a heteroatom selected from N, P, As, O, S, Se and Te; and wherein independently any two or more of the substituents  $R_1$ - $R_{12}$  which are located on adjacent ring positions of the polyacene may, together, optionally constitute a further  $C_4$ - $C_{40}$  saturated or unsaturated ring optionally interrupted by O, S or -N( $R_a$ ) where  $R_a$  is as defined above) or an aromatic ring system, fused to the polyacene; and wherein n is 0, 1, 2, 3 or 4, also claimed is an electronic device, particularly an organic field effect transistor comprising the organic semiconductor layer formulation.



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